CLAIMS

What is claimed is:

1. A brazed component assembly comprising:

a stainless steel part;

a titanium part; and

a compact filler material comprising at least one set of metal composite particles, said at least one set of metal composite particle comprised of at least one primary particle laminate layer comprising a nickel alloy and at least one secondary sphere laminate layer comprising a titanium alloy, for bonding said stainless steel part to said titanium part.

2. The component assembly of claim 1, wherein said at least one primary particle laminate layer comprises substantially pure nickel.

3. The component assembly of claim 1, wherein said at least one secondary particle laminate layer comprising substantially pure titanium.

4. The component assembly of claim 3, wherein said at least one secondary particle laminate layer comprising substantially pure titanium is at least about 99.0% titanium.

5. The component assembly of claim 1, wherein said at least one primary particle laminate layer comprising a nickel alloy is an outer layer of said metal composite particle.

6. The component assembly of claim 1, wherein said primary particle laminate layer comprising substantially pure nickel.

7. The component assembly of claim 6, wherein said primary particle laminate layer comprising substantially pure nickel is at least about 99.0% nickel.

8. The component assembly of claim 1, wherein said at least one primary particle laminate layer comprising a nickel alloy is about 22% to 50% by weight of said compact filler material.

9. The component assembly of claim 1, wherein said stainless steel part is selected from the group consisting of 200, 300, and 400 series stainless steel.

10. The component assembly of claim 1, wherein said stainless steel part is selected from the group consisting of implantable stainless steels.

11. The component assembly of claim 1, wherein said stainless steel part comprises 316L stainless steel.

12. The component assembly of claim 1, wherein said titanium part is selected from the group consisting of titanium and titanium alloys.

13. The component assembly of claim 1, wherein said titanium part comprises Ti-6Al-4V.

14. The component assembly of claim 1, wherein said compact filler material is formed in place between said stainless steel part and said titanium part.

15. The component assembly of claim 1, wherein said titanium part is selected from the group consisting of implantable grade titanium and titanium alloys.